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Conference Abstract

Accelerating Museum AI Research and Application at the UK Natural History Museum: The NHM AI Lab Programme

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Abstract

The United Kingdom's Natural History Museum (NHM) AI Lab Programme represents a pioneering initiative aimed at harnessing the power of artificial intelligence (AI) to bridge the gap between the museum's extensive collection and cutting-edge AI technologies. Despite its immense potential, the application of AI in museum research remains nascent (e.g., He et al. 2024), with some individual research groups pursuing independent projects without cohesive collaboration with AI experts who know or have experience in similar endeavours. Moreover, differing standards in utilising AI among researchers add complexity to the field. The NHM AI Lab Programme addresses these challenges by co-creating AI pilot projects that bring together the NHM's collection, academic researchers, and AI experts.

The NHM AI Lab Programme serves as a nexus for interdisciplinary collaboration, offering expertise in AI, machine learning, data science, and software engineering to support NHM researchers. Through one-to-one consultations and collaborative research projects, the NHM AI Lab Programme facilitates the integration of innovative AI-driven technologies into streamlining digitisation workflows and enhancing Earth and Life Science research at the NHM.

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In less than a year since its inception, our Programme has achieved several milestones, hosting around 20 diverse projects. These include research projects such as the application of AI for the automatic detection and identification of nannofossils in chalk, the classification of ancient shark and dinosaur teeth, the prediction of mammal disease outbreaks, and the extraction of data from historical bird egg records. Additional projects focus on the automation of mineral analysis and the detection of secondary impact craters on planetary surfaces using AI. Some led to journal publications (e.g., He et al. 2024), while others streamlined NHM researchers' workflows, enhancing their processes of research and digitisation. Moreover, several initiatives have paved the way for new funding streams and collaborative ventures, as well as promising commercial prospects. Certain projects have pioneered the creation or transformation of datasets to meet AI-ready standards, such as data quality, consistency, accessibility, usability, and data governance protocols, helping to embed AI practices into NHM research.

This AI Lab Programme can act as a model for other institutions addressing a similar challenge of bridging the gap between AI and their research and collections. This presentation provides insights into the establishment and operation of the NHM AI Lab Programme, shares experiences, highlights successful collaborations, discusses challenges encountered, and outlines future directions.

Keywords

institutional AI integration, AI collaboration model, model for collaboration, AI-driven digitisation, interdisciplinary collaboration, research innovation

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Conflicts of interest

The authors have declared that no competing interests exist.

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